Missouri Assessment Program
Spring 2005

Science

Anchor Pages for Released Items

Grade 10

1-2

3 Points

The three main particles that make up a neutral atom each have mass and either a positive (+), negative (–), or neutral (0) charge.

List the three main particles found in a neutral atom.

1. proton - +
2. neutron - 0
3. electron - −

Show the charge on each of these three particles by writing a symbol (+, −, or 0) to the right of its name.

Circle the name of the particle that has the least mass.

Score Pt. 3
3 Key Elements
> Electron, proton, neutron
> - with electron, + with proton, 0 with neutron
> Electron is circled

101446

2 Points

The three main particles that make up a neutral atom each have mass and either a positive (+), negative (–), or neutral (0) charge.

List the three main particles found in a neutral atom.

1. protons +
2. neutron 0
3. electrons –

Show the charge on each of these three particles by writing a symbol (+, –, or 0) to the right of its name.

Circle the name of the particle that has the least mass.

Score Pt. 2
2 Key Elements
> Electron, proton, neutron
> - with electron, + with proton, 0 with neutron
> [electron is NOT circled]

099946

The three main particles that make up a neutral atom each have mass and either a positive (+), negative (–), or neutral (0) charge.

List the three main particles found in a neutral atom.

1. electron +
2. proton –
3. neutron 0

Show the charge on each of these three particles by writing a symbol (+, –, or 0) to the right of its name.

Circle the name of the particle that has the least mass.

Score Pt. 1
1 Key Element
> Electron, proton, neutron
> [- NOT with electron, + NOT with proton, 0 with neutron]
> [electron is NOT circled]

The three main particles that make up a neutral atom each have mass and either a positive (+), negative (–), or neutral (0) charge.

List the three main particles found in a neutral atom.

1. nucleus - +
2. vacuole - -
3. centrioles - 0

Show the charge on each of these three particles by writing a symbol (+, –, or 0) to the right of its name.

Circle the name of the particle that has the least mass.

Score Pt. 0
0 Key Elements
> [NOT electron, proton, neutron]
> [- NOT with electron, + NOT with proton, 0 NOT with neutron]
> [electron is NOT circled]

100499

1-6

1 Point

Formerly, doctors were limited to using X-rays to study the insides of patients. Recently, doctors have been able to obtain images of the insides of patients using Magnetic Resonance Imaging (MRI).

Describe <u>one</u> advantage of using Magnetic Resonance Imaging for examining patients compared to using X-rays.

You don't have the high risk of radiation w/the MRI

Score Pt. 1 1 Key Element > Lower risk of radiation

106863

Formerly, doctors were limited to using X-rays to study the insides of patients. Recently, doctors have been able to obtain images of the insides of patients using Magnetic Resonance Imaging (MRI).

Describe <u>one</u> advantage of using Magnetic Resonance Imaging for examining patients compared to using X-rays.

More comfortable

Score Pt. 0
0 Key Elements
> [incorrect response]

1-15

1 Point

Jupiter is the largest planet in our solar system.

Explain why Jupiter might have become a star if it had had more mass and had been larger when it was first formed.

Because the more mass it would have had, the more gravity it would have created. This would cause a great amount of heat because of the condensed gases and probably would have collapsed in on itself igniting a self sustaining fusion reaction

Score Pt. 1
1 Key Element
> More gravity leading to collapse leading to fusion reaction - correct

222173

Jupiter is the largest planet in our solar system.

Explain why Jupiter might have become a star if it had had more mass and had been larger when it was first formed.

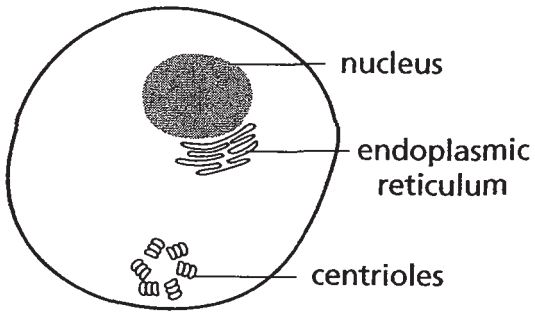
Jupiter might have become a star if it had had more mass and had been larger when it was formed because then it would not be the largest planet in our solar system.

Score Pt. 0
0 Key Elements
> [Basically repeats prompt]

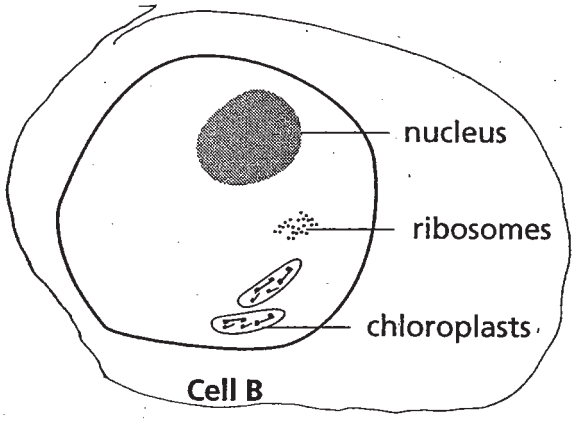
1 Point

3-30

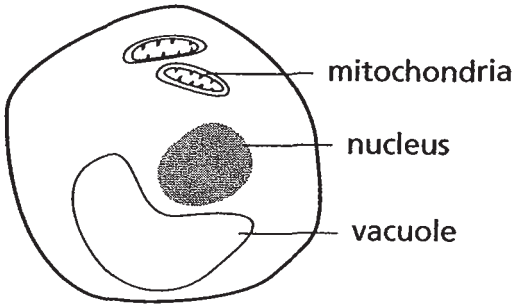
Circle the diagram that depicts a cell capable of making sugar.



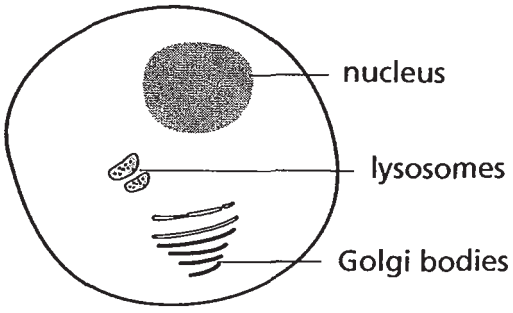
Cell A



Cell B



Cell C



Cell D

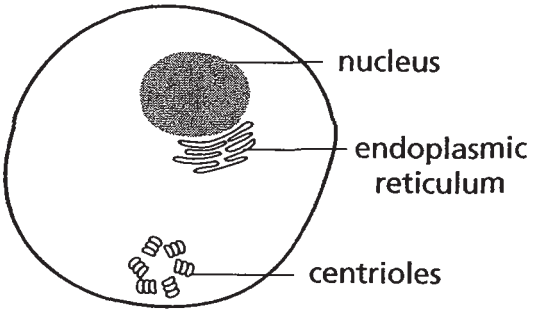
Explain your answer.

Cell B has chloroplasts in it and that makes sugar.

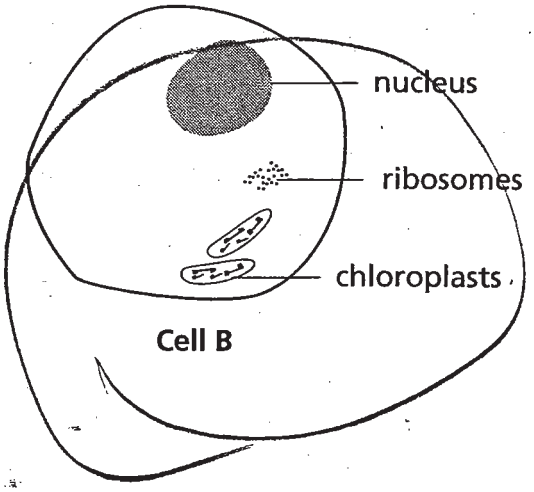
Score Pt. 1
1 Key Element
> Cell B AND chloroplasts

100807

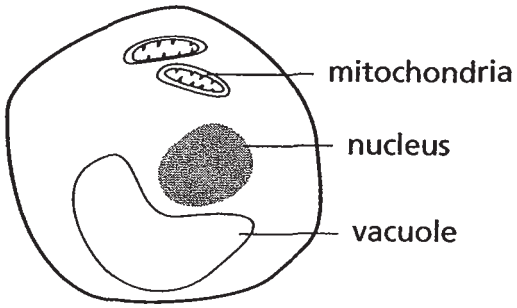
Circle the diagram that depicts a cell capable of making sugar.



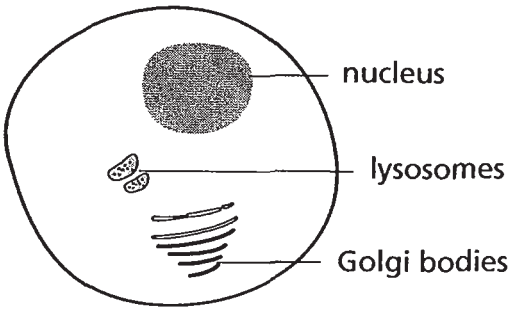
Cell A



Cell B



Cell C



Cell D

Explain your answer.

Score Pt. 0 0 Key Elements > [cell B but NOT chloroplasts]